

**Patent claims**

1. Alkyd resin emulsions for topcoats comprising a water-insoluble alkyd resin **A** and a water-soluble alkyd resin **B**, which is used as an emulsifying resin and is an esterification product of an alkyd resin **Ba**, which is homogeneously miscible with the alkyd resin **A** to be emulsified at least in a mass ratio range of **Ba** to **A** of from 2 : 98 to 50 : 50, and an adduct **Bb** of a C<sub>1</sub>-C<sub>4</sub>-alkoxypolyethylene glycol **Bba** and a cycloaliphatic dicarboxylic acid anhydride **Bbb** in a ratio of amounts of substance of **Bba** to **Bbb** of from 0.95 : 1.05 mol/mol to 1.05 : 0.95 mol/mol.
2. Alkyd resin emulsions according to claim 1, characterised in that they comprise in their solids content a mass fraction of 70 % to 95 % of the water-insoluble alkyd resin **A** and 5 % to 30 % of the water-soluble alkyd resin **B** employed as an emulsifying resin.
3. Alkyd resin emulsions according to claim 1, characterised in that the alkyd resin **B** is an esterification product of mass fractions of from 25 % to 60 % of the alkyd resin **Ba** and 40 % to 75 % of the adduct **Bb**.
4. Alkyd resin emulsions according to claim 1, characterised in that the alkyd resin **A** has an oil content of from 25 % to 75 % and an acid number of up to 20 mg/g.
5. Alkyd resin emulsions according to claim 1, characterised in that the acid number of the alkyd resin **B** is not more than 3 mg/g.
6. Process for the preparation of alkyd resin emulsions according to claim 1, characterised in that

- in the first step mass fractions of  
70 % to 95 % of a C<sub>1</sub>-C<sub>4</sub>-alkoxypolyethylene glycol **Bba**  
having a weight-average molar mass  $M_w$  of from  
500 g/mol to 4,000 g/mol, and  
5 5 % to 30 % of a cycloaliphatic dicarboxylic acid  
anhydride **Bbb** are mixed in a substance amounts ratio  
of from 0.95 : 1.05 mol/mol to 1.05 : 0.95 mol/mol,  
and are reacted in the presence of a catalyst, with  
opening of the acid anhydride, to form an adduct **Bb**,
  - 10 - in the second step a mass fraction of from 40 % to  
75 % of the adduct **Bb** is esterified with a mass  
fraction of from 25 % to 60 % of the alkyd resin **Ba**,  
the sum of the said mass fractions in the reaction  
mixture giving 100 %, to form an alkyd resin **B**,
  - 15 - in the third step the alkyd resin **B** is mixed with  
water, a mass fraction of the alkyd resin of from  
30 % to 60 % being present in the mixture, and the  
mixture having a dynamic viscosity, measured at  
23 °C and a shear gradient of 100 s<sup>-1</sup>, of from 5 Pa·s  
20 to 50 Pa·s, and
  - in the fourth step the alkyd resin **A** is mixed with  
the mixture of water and the alkyd resin **B** from the  
third step at a temperature of below 100 °C and the  
resulting alkyd resin emulsion is diluted to a  
25 solids mass fraction of from 40 % to 75 % and a  
dynamic viscosity of from 200 mPa·s to 3,000 mPa·s  
by addition of water.
7. Process according to claim 6, characterised in that  
in the second step the amount of the reactants is chosen  
30 such that the acid number of the alkyd resin **B** is not  
more than 3 mg/g.
8. Process according to claim 6, characterised in that  
the ratio of the mass of the alkyd resin **A** to the mass of  
the alkyd resin **B** is 70 : 30 kg/kg to 95 : 5 kg/kg.

9. Use of alkyd resin emulsions according to claim 1 for the preparation of water-dilutable paints or glazes.

10. Use of alkyd resin emulsions according to claim 1 as binders for coating substrates chosen from textiles,  
5 mineral materials, metals and wood.